

Use Attainability Analysis
for
WBID 0924 South Fork Blackwater River

Submitted by
SES, Inc.

to
Missouri Department of Natural Resources
Water Protection Program

Date received: November 14, 2007

Field Data Sheets for Recreation Use Stream Surveys

Data Sheet A - Water Body Identification

I. Water Body Information (For water body being surveyed)

Water Body Name (from USGS 7.5' quad): South Fork Blackwater River			
Missouri Water Body Identification (WBID) Number:		924	
8 digit HUC code:	10290108	County:	Johnson
Upstream Legal Description (from Table H):	T47N	R28W	Sec 30
Downstream Legal Description (from Table H):	T46N	R27W	Sec 19
Number of sites evaluated:	8		
List all site numbers, listed consequently upstream to downstream: 1, 2, 3, 4, 5, 6, 7, 8			

Site Locations Map(s): Attach a map of the entire segment with assessment sites clearly labeled.
Mark any other items that may be of interest.

II. Facility Information (list all permitted discharges to the water body segment)

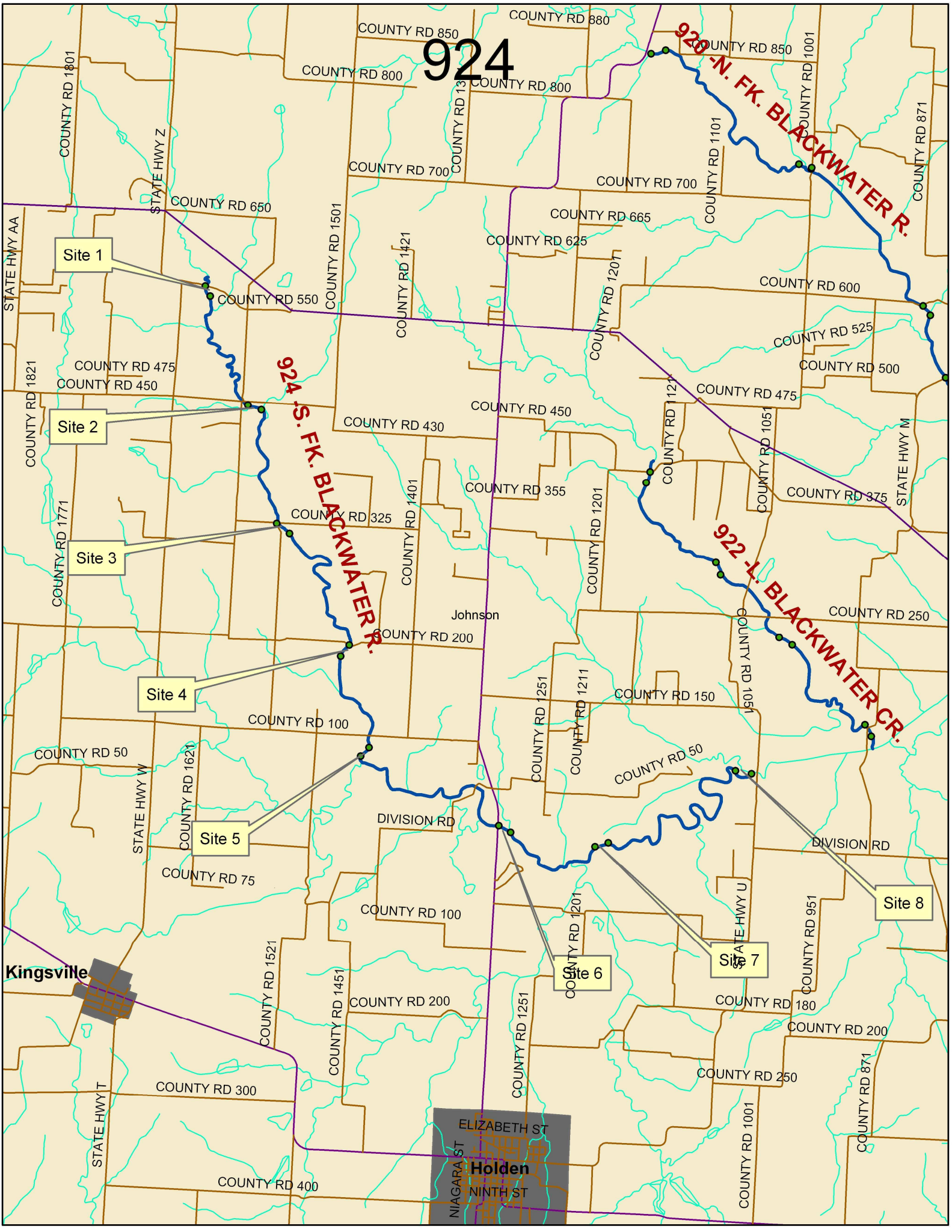
Facility Name(s) and Permit Number(s): Powell Gardens WWTF MO0123501
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III. UAA Surveyor (please print legibly)

Name of Surveyor: Gilisa Gould	Telephone Number: 913.307.0054
Organization/Employer: SES, Inc.	

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Signed: gilisa gould **Date:** 11.05.07



WBID # 924
 Site # 1

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.26.07 14:50	Site Location Description (e.g. road crossing):
Personnel: Gilisa Gould and Larissa Brown	CR 550
Current Weather Conditions: clear	Facility Name: Powell Gardens WWTF
Weather conditions for the past 10 days: 2.17 inches	Permit Number: MO0123501
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0408788	4301366		5.1	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0408880	4301186		4.2	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
146	downstream, T1	147	upstream, T1	148	upstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
149	downstream, T11	150	cow tracks		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 924
Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel 60	% Sand 20	% Silt	% Mud/Clay 20	% Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 924
Site # 1

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.26.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>924</u> Site #: <u>1</u> Estimated Channel Incision: <u>1.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0408788</u> UTM Y: <u>4301366</u> +/- <u>5.1</u> (meters) 11 UTM X: <u>0408880</u> UTM Y: <u>4301186</u> +/- <u>4.2</u> (meters) Average Stream Width: <u>6</u> (meters) Length of Survey Segment: <u>120</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Larissa Brown</u>	Dissolved Oxygen Date: <u>10.26.07</u> Time: <u>14:50</u> Dissolved Oxygen: <u>5.7</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>15.3</u> (°C)
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Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.1	0.01	0.6	0.20	0.1	0.05	0.2	0.01	0.3	0.05	0.8	0.05	0.1	0.05	0.2	0.01	0.1	0.01	0.5	0.01	0.1	0.01
2	0.1	0.01	1.2	0.35	0.2	0.10	0.4	0.01	0.6	0.15	1.6	0.20	0.2	0.10	0.4	0.01	0.1	0.01	1.0	0.05	0.2	0.01
3	0.2	0.01	1.8	0.50	0.3	0.10	0.6	0.01	0.9	0.30	2.4	0.40	0.3	0.10	0.6	0.05	0.2	0.01	1.5	0.10	0.3	0.01
4	0.2	0.05	2.4	0.50	0.4	0.10	0.8	0.01	1.2	0.35	3.2	0.30	0.4	0.10	0.8	0.01	0.2	0.01	2.0	0.15	0.4	0.01
5	0.3	0.05	3.0	0.60	0.5	0.05	1.0	0.01	1.5	0.25	4.0	0.35	0.5	0.10	1.0	0.05	0.3	0.05	2.5	0.15	0.5	0.01
6	0.3	0.05	3.6	0.55	0.6	0.05	1.2	0.01	1.8	0.25	4.8	0.50	0.6	0.10	1.2	0.05	0.3	0.05	3.0	0.10	0.6	0.40
7	0.4	0.05	4.2	0.40	0.7	0.05	1.4	0.01	2.1	0.15	5.6	0.70	0.7	0.05	1.4	0.05	0.4	0.01	3.5	0.10	0.7	0.05
8	0.4	0.01	4.8	0.20	0.8	0.01	1.6	0.01	2.4	0.05	6.4	0.65	0.8	0.05	1.6	0.05	0.4	0.01	4.0	0.10	0.8	0.05
9	0.5	0.01	5.4	0.10	0.9	0.01	1.8	0.01	2.7	0.05	7.2	0.30	0.9	0.05	1.8	0.01	0.5	0.01	4.5	0.05	0.9	0.40
Right Bank	0.5	0.00	6.0	0.00	1.0	0.00	2.0	0.00	3.0	0.00	8.0	0.00	1.0	0.00	2.0	0.00	0.5	0.00	5.0	0.00	1.0	0.00
Feature Type <small>(riffle, run, or pool)</small>	riffle		pool		pool		riffle		pool		pool		pool		pool		riffle		pool		riffle	

(riffle, run, or pool)

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.05.07

WBID # 924
 Site # 2

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.26.07 15:30	Site Location Description (e.g. road crossing):
Personnel: Gilisa Gould and Larissa Brown	CR 1601
Current Weather Conditions: clear	Facility Name: Powell Gardens WWTF
Weather conditions for the past 10 days: 2.17 inches	Permit Number: MO0123501
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0409540	4299255		5.4	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0409778	4299182		4.2	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
151	downstream, T1	152	upstream, T1	153	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
154	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 924
 Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
30	30	10			30

Aquatic Vegetation:

some grasses in water. Algal growth 20%.
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Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
					brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input type="checkbox"/> Fine sediments	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 924
Site # 2

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.26.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>924</u> Site #: <u>2</u> Estimated Channel Incision: <u>1.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0409540</u> UTM Y: <u>4299255</u> +/- <u>5.4</u> (meters) 11 UTM X: <u>0409778</u> UTM Y: <u>4299255</u> +/- <u>4.2</u> (meters) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Larissa Brown</u>	Dissolved Oxygen Date: <u>10.26.07</u> Time: <u>15:30</u> Dissolved Oxygen: <u>7.3</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>18.5</u> (°C)
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Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1.0	0.01	1.2	0.05	1.5	0.01	1.2	0.10	0.7	0.05	1.0	0.05	1.0	0.10	0.6	0.01	0.5	0.05	0.5	0.01	0.3	0.01
2	2.0	0.00	2.4	0.15	3.0	0.00	2.4	0.30	1.4	0.15	2.0	0.20	2.0	0.40	1.2	0.10	1.0	0.10	1.0	0.05	0.6	0.01
3	3.0	0.01	3.6	0.20	4.5	0.00	3.6	0.40	2.1	0.00	3.0	0.05	3.0	0.45	1.8	0.20	1.5	0.20	1.5	0.05	0.9	0.05
4	4.0	0.00	4.8	0.20	6.0	0.00	4.8	0.65	2.8	0.00	4.0	0.00	4.0	0.50	2.4	0.40	2.0	0.30	2.0	0.05	1.2	0.05
5	5.0	0.01	6.0	0.25	7.5	0.00	6.0	0.70	3.5	0.00	5.0	0.30	5.0	0.55	3.0	0.50	2.5	0.40	2.5	0.05	1.5	0.10
6	6.0	0.00	7.2	0.40	9.0	0.00	7.2	0.65	4.2	0.20	6.0	0.50	6.0	0.50	3.6	0.45	3.0	0.45	3.0	0.05	1.8	0.15
7	7.0	0.01	8.4	0.55	10.5	0.00	8.4	0.40	4.9	0.15	7.0	0.40	7.0	0.40	4.2	0.40	3.5	0.50	3.5	0.01	2.1	0.15
8	8.0	0.00	9.6	0.50	12.0	0.01	9.6	0.20	5.6	0.01	8.0	0.20	8.0	0.25	4.8	0.30	4.0	0.40	4.0	0.01	2.4	0.10
9	9.0	0.01	10.8	0.25	13.5	0.05	10.8	0.15	6.3	0.01	9.0	0.05	9.0	0.10	5.4	0.10	4.5	0.15	4.5	0.01	2.7	0.05
Right Bank	10.0	0.00	12.0	0.00	15.0	0.00	12.0	0.00	7.0	0.00	10.0	0.00	10.0	0.00	6.0	0.00	5.0	0.00	5.0	0.00	3.0	0.00
Feature Type <small>(riffle, run, or pool)</small>	riffle		pool		riffle		pool		pool		pool		pool		pool		pool		pool		pool	

(riffle, run, or pool)

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.05.07

WBID # 924
 Site # 3

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.26.07 17:05	Site Location Description (e.g. road crossing):
Personnel: Gilisa Gould and Larissa Brown	CR 325
Current Weather Conditions: clear	Facility Name: Powell Gardens WWTF
Weather conditions for the past 10 days: 2.17 inches	Permit Number: MO0123501
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0410051	4297185		5.1	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0410272	4296999		3.3	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
155	downstream, T1	156	upstream, T1	157	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
158	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 924
 Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble 20	% Gravel	% Sand	% Silt	% Mud/Clay 10	% Bedrock 70
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Aquatic Vegetation:

Algal growth is 20%.

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other: brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 924
Site # 3

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.26.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>924</u> Site #: <u>3</u> Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0410051</u> UTM Y: <u>4297185</u> +/- <u>5.1</u> (meters) 11 UTM X: <u>0410272</u> UTM Y: <u>4296999</u> +/- <u>3.3</u> (meters) Average Stream Width: <u>10</u> (meters) Length of Survey Segment: <u>200</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Larissa Brown</u>	Dissolved Oxygen Date: <u>10.26.07</u> Time: <u>17:05</u> Dissolved Oxygen: <u>7.3</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>17.2</u> (°C)
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Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.9	0.15	1.0	0.05	1.1	0.01	0.9	0.05	0.9	0.01	0.9	0.05	0.7	0.01	0.8	0.01	1.4	0.15	0.3	0.10	0.5	0.10
2	1.8	0.15	2.0	0.05	2.2	0.10	1.8	0.05	1.8	0.05	1.8	0.15	1.4	0.05	1.6	0.01	2.8	0.30	0.6	0.15	1.0	0.20
3	2.7	0.10	3.0	0.05	3.3	0.20	2.7	0.05	2.7	0.10	2.7	0.20	2.1	0.10	2.4	0.01	4.2	0.40	0.9	0.05	1.5	0.50
4	3.6	0.15	4.0	0.10	4.4	0.20	3.6	0.01	3.6	0.15	3.6	0.20	2.8	0.10	3.2	0.05	5.6	0.50	1.2	0.05	2.0	0.60
5	4.5	0.10	5.0	0.10	5.5	0.20	4.5	0.01	4.5	0.25	4.5	0.15	3.5	0.05	4.0	0.10	7.0	0.55	1.5	0.05	2.5	0.55
6	5.4	0.10	6.0	0.05	6.6	0.15	5.4	0.00	5.4	0.15	5.4	0.20	4.2	0.10	4.8	0.25	8.4	0.50	1.8	0.05	3.0	0.40
7	6.3	0.10	7.0	0.05	7.7	0.20	6.3	0.05	6.3	0.20	6.3	0.20	4.9	0.00	5.6	0.15	9.8	0.60	2.1	0.05	3.5	0.30
8	7.2	0.10	8.0	0.10	8.8	0.25	7.2	0.00	7.2	0.10	7.2	0.15	5.6	0.01	6.4	0.05	11.2	0.40	2.4	0.05	4.0	0.20
9	8.1	0.01	9.0	0.01	9.9	0.15	8.1	0.01	8.1	0.05	8.1	0.05	6.3	0.01	7.2	0.01	12.6	0.10	2.7	0.01	4.5	0.10
Right Bank	9.0	0.00	10.0	0.00	11.0	0.00	9.0	0.00	9.0	0.00	9.0	0.00	7.0	0.00	8.0	0.00	14.0	0.00	3.0	0.00	5.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		pool		pool		riffle		pool		pool		riffle		pool	

(riffle, run, or pool)

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.05.07

WBID # 924
 Site # 4

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.29.07 15:40	Site Location Description (e.g. road crossing):
Personnel: Gilisa Gould and Larissa Brown	CR 200
Current Weather Conditions: clear	Facility Name: Powell Gardens WWTF
Weather conditions for the past 10 days: 2.17 inches	Permit Number: MO0123501
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0411333	4295020		7.6	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0411194	4294841		16.1	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
173	downstream, T1	174	upstream, T1	175	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
176	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 924
 Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble 10	% Gravel 30	% Sand 30	% Silt	% Mud/Clay 30	% Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
					brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 924
Site # 4

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.29.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>924</u> Site #: <u>4</u>															Dissolved Oxygen					
Estimated Channel Incision: <u>2.0</u> (m) (height between low bank width and water)															Date: <u>10.29.07</u> Time: <u>15:40</u>					
GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM)															Dissolved Oxygen: <u>14.9</u> (mg/L)					
01 UTM X: <u>0411333</u> UTM Y: <u>4295020</u> +/- <u>7.6</u> (meters)															Dissolved Oxygen: _____ (% sat)					
11 UTM X: <u>0411194</u> UTM Y: <u>4294841</u> +/- <u>16.1</u> (meters)															Specific Cond: _____ (μS/cm)					
Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters)															Water Temperature: <u>16.1</u> (°C)					
(To determine Length of Reach) (20x average stream width)																				
Field Staff: <u>Gilisa Gould and Larissa Brown</u>																				

Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.7	0.01	0.8	0.05	0.1	0.01	0.7	0.05	0.1	0.05	0.2	0.01	0.8	0.10	0.1	0.01	0.2	0.05	0.8	0.05	0.3	0.01
2	1.4	0.05	1.6	0.20	0.2	0.01	1.4	0.20	0.1	0.05	0.4	0.01	1.6	0.35	0.2	0.05	0.4	0.05	1.6	0.05	0.6	0.05
3	2.1	0.00	2.4	0.25	0.3	0.05	2.1	0.30	0.2	0.15	0.6	0.01	2.4	0.50	0.3	0.10	0.6	0.10	2.4	0.05	0.9	0.10
4	2.8	0.05	3.2	0.25	0.4	0.05	2.8	0.30	0.2	0.15	0.8	0.01	3.2	0.40	0.4	0.15	0.8	0.15	3.2	0.20	1.2	0.25
5	3.5	0.25	4.0	0.25	0.5	0.05	3.5	0.40	0.3	0.15	1.0	0.05	4.0	0.35	0.5	0.15	1.0	0.20	4.0	0.20	1.5	0.25
6	4.2	0.20	4.8	0.30	0.6	0.05	4.2	0.40	0.3	0.10	1.2	0.05	4.8	0.30	0.6	0.20	1.2	0.20	4.8	0.25	1.8	0.10
7	4.9	0.20	5.6	0.35	0.7	0.01	4.9	0.50	0.4	0.10	1.4	0.01	5.6	0.20	0.7	0.15	1.4	0.10	5.6	0.25	2.1	0.05
8	5.6	0.20	6.4	0.35	0.8	0.01	5.6	0.40	0.4	0.05	1.6	0.05	6.4	0.10	0.8	0.10	1.6	0.05	6.4	0.20	2.4	0.05
9	6.3	0.10	7.2	0.10	0.9	0.01	6.3	0.20	0.5	0.01	1.8	0.05	7.2	0.05	0.9	0.05	1.8	0.01	7.2	0.05	2.7	0.01
Right Bank	7.0	0.00	8.0	0.00	1.0	0.00	7.0	0.00	0.5	0.00	2.0	0.00	8.0	0.00	1.0	0.00	2.0	0.00	8.0	0.00	3.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		riffle		pool		riffle		riffle		pool		pool		pool		pool		pool	

(riffle, run, or pool)

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.05.07

WBID # 924
 Site # 5

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.29.07 16:15	Site Location Description (e.g. road crossing):
Personnel: Gilisa Gould and Larissa Brown	CR 100
Current Weather Conditions: clear	Facility Name: Powell Gardens WWTF
Weather conditions for the past 10 days: 2.17 inches	Permit Number: MO0123501
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0411680	4293215		5.7	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0411531	4293061		17.3	

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
177	downstream, T1	178	upstream, T1	179	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
180	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 924
Site # 5

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
10	30	30	10	10	10

Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 924
Site # 5

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.29.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>924</u> Site #: <u>5</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0411680</u> UTM Y: <u>4293215</u> +/- <u>5.7</u> (meters) 11 UTM X: <u>0411531</u> UTM Y: <u>4293061</u> +/- <u>17.3</u> (meters) Average Stream Width: <u>7</u> (meters) Length of Survey Segment: <u>150</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Larissa Brown</u>	Dissolved Oxygen Date: <u>10.29.07</u> Time: <u>16:15</u> Dissolved Oxygen: <u>7.5</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>13.9</u> (°C)
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Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.5	0.05	0.2	0.05	0.5	0.01	0.6	0.05	0.7	0.05	0.6	0.05	0.3	0.05	0.2	0.05	0.5	0.05	0.8	0.05	0.7	0.10
2	1.0	0.10	0.4	0.05	1.0	0.05	1.2	0.05	1.4	0.10	1.2	0.05	0.6	0.10	0.4	0.10	1.0	0.15	1.6	0.10	1.4	0.20
3	1.5	0.15	0.6	0.10	1.5	0.05	1.8	0.10	2.1	0.10	1.8	0.20	0.9	0.30	0.6	0.15	1.5	0.30	2.4	0.25	2.1	0.20
4	2.0	0.30	0.8	0.15	2.0	0.05	2.4	0.10	2.8	0.00	2.4	0.40	1.2	0.40	0.8	0.15	2.0	0.35	3.2	0.00	2.8	0.25
5	2.5	0.25	1.0	0.20	2.5	0.05	3.0	0.15	3.5	0.00	3.0	0.60	1.5	0.35	1.0	0.15	2.5	0.30	4.0	0.00	3.5	0.30
6	3.0	0.15	1.2	0.20	3.0	0.05	3.6	0.15	4.2	0.01	3.6	0.60	1.8	0.20	1.2	0.15	3.0	0.10	4.8	0.00	4.2	0.40
7	3.5	0.10	1.4	0.20	3.5	0.05	4.2	0.20	4.9	0.05	4.2	0.50	2.1	0.10	1.4	0.10	3.5	0.05	5.6	0.05	4.9	0.35
8	4.0	0.05	1.6	0.10	4.0	0.05	4.8	0.15	5.6	0.01	4.8	0.45	2.4	0.05	1.6	0.05	4.0	0.05	6.4	0.10	5.6	0.20
9	4.5	0.01	1.8	0.05	4.5	0.05	5.4	0.10	6.3	0.01	5.4	0.20	2.7	0.01	1.8	0.01	4.5	0.10	7.2	0.15	6.3	0.10
Right Bank	5.0	0.00	2.0	0.00	5.0	0.00	6.0	0.00	7.0	0.00	6.0	0.00	3.0	0.00	2.0	0.00	5.0	0.00	8.0	0.00	7.0	0.00
Feature Type (riffle, run, or pool)	pool		pool		pool		pool		riffle		pool		pool		pool		pool		pool		pool	

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width
 GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.
 Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)
 Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)
 All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.05.07

WBID # 924
 Site # 6

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.29.07 16:45	Site Location Description (e.g. road crossing):
Personnel: Gilisa Gould and Larissa Brown	Highway 131
Current Weather Conditions: clear	Facility Name: Powell Gardens WWTF
Weather conditions for the past 10 days: 2.17 inches	Permit Number: MO0123501
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>	

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:		Meters
	0413971	4291830			7.3
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:		Meters
	0414181	4291714			5.1

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
181	downstream, T1	182	upstream, T1	183	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
184	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 924
 Site # 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: none				

Substrate:

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
10	30	30	10	10	10

Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input checked="" type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
					brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 924
Site # 6

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.29.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>924</u> Site #: <u>6</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0413971</u> UTM Y: <u>4291830</u> +/- <u>7.3</u> (meters) 11 UTM X: <u>0414181</u> UTM Y: <u>4291714</u> +/- <u>5.1</u> (meters) Average Stream Width: <u>8</u> (meters) Length of Survey Segment: <u>160</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Larissa Brown</u>	Dissolved Oxygen Date: <u>10.29.07</u> Time: <u>16:45</u> Dissolved Oxygen: <u>9.2</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>12.5</u> (°C)
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Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.3	0.05	0.8	0.01	0.7	0.05	0.7	0.01	0.7	0.01	0.6	0.01	0.1	0.05	0.3	0.05	0.8	0.05	0.7	0.10	0.8	0.10
2	0.6	0.05	1.6	0.10	1.4	0.05	1.4	0.05	1.4	0.05	1.2	0.10	0.2	0.05	0.6	0.30	1.6	0.20	1.4	0.30	1.6	0.40
3	0.9	0.01	2.4	0.20	2.1	0.10	2.1	0.20	2.1	0.25	1.8	0.10	0.3	0.10	0.9	0.40	2.4	0.10	2.1	0.55	2.4	0.65
4	1.2	0.10	3.2	0.70	2.8	0.30	2.8	0.30	2.8	0.30	2.4	0.15	0.4	0.10	1.2	0.30	3.2	0.20	2.8	0.40	3.2	0.70
5	1.5	0.15	4.0	0.70	3.5	0.50	3.5	0.50	3.5	0.35	3.0	0.15	0.5	0.10	1.5	0.40	4.0	0.10	3.5	0.30	4.0	0.70
6	1.8	0.05	4.8	0.50	4.2	0.50	4.2	0.55	4.2	0.40	3.6	0.10	0.6	0.10	1.8	0.45	4.8	0.30	4.2	0.30	4.8	0.70
7	2.1	0.05	5.6	0.30	4.9	0.20	4.9	0.30	4.9	0.35	4.2	0.10	0.7	0.10	2.1	0.25	5.6	0.40	4.9	0.30	5.6	0.55
8	2.4	0.05	6.4	0.05	5.6	0.15	5.6	0.10	5.6	0.25	4.8	0.10	0.8	0.05	2.4	0.10	6.4	0.30	5.6	0.20	6.4	0.40
9	2.7	0.01	7.2	0.05	6.3	0.05	6.3	0.05	6.3	0.10	5.4	0.05	0.9	0.05	2.7	0.05	7.2	0.25	6.3	0.10	7.2	0.15
Right Bank	3.0	0.00	8.0	0.00	7.0	0.00	7.0	0.00	7.0	0.00	6.0	0.00	1.0	0.00	3.0	0.00	8.0	0.00	7.0	0.00	8.0	0.00
Feature Type <small>(rifle, run, or pool)</small>	rifle		pool		pool		pool		pool		pool		rifle		pool		pool		pool		pool	

(riffle, run, or pool)

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.05.07

WBID # 924
 Site # 7

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.30.07	10:20	Site Location Description (e.g. road crossing):
Personnel: Gilisa Gould and Larissa Brown	75th Rd	
Current Weather Conditions: clear	Facility Name: Powell Gardens WWTF	
Weather conditions for the past 10 days: 2.17 inches	Permit Number: MO0123501	
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>		

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)			
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0415669	4291455	4.8
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy: Meters
	0415903	4291503	4.5

Photos:

Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
194	downstream, T1	195	upstream, T1	196	downstream, T11
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
197	upstream, T11				
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 924
Site # 7

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input checked="" type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:

Comments:

none

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering

comments/other:

none

Substrate:

% Cobble	% Gravel	% Sand	% Silt	% Mud/Clay	% Bedrock
10	30	30		30	

Aquatic Vegetation:

grass on banks

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input checked="" type="checkbox"/> Green	<input type="checkbox"/> Gray	<input type="checkbox"/> Milky	<input type="checkbox"/> Other:
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input checked="" type="checkbox"/> Foam	<input type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 924
Site # 7

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

none

Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.30.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>924</u> Site #: <u>7</u> Estimated Channel Incision: <u>3.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0415669</u> UTM Y: <u>4291455</u> +/- <u>4.8</u> (meters) 11 UTM X: <u>0415903</u> UTM Y: <u>4291503</u> +/- <u>4.5</u> (meters) Average Stream Width: <u>9</u> (meters) Length of Survey Segment: <u>180</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Larissa Brown</u>	Dissolved Oxygen Date: <u>10.30.07</u> Time: <u>10:20</u> Dissolved Oxygen: <u>12.2</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>19.1</u> (°C)
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Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0.6	0.01	0.9	0.05	0.4	0.05	0.9	0.05	1.0	0.05	1.0	0.05	1.0	0.05	0.9	0.05	0.9	0.05	0.7	0.05	0.7	0.10
2	1.2	0.10	1.8	0.45	0.8	0.20	1.8	0.25	2.0	0.10	2.0	0.35	2.0	0.20	1.8	0.25	1.8	0.30	1.4	0.20	1.4	0.20
3	1.8	0.05	2.7	0.70	1.2	0.30	2.7	0.40	3.0	0.40	3.0	0.45	3.0	0.40	2.7	0.15	2.7	0.60	2.1	0.30	2.1	0.05
4	2.4	0.00	3.6	1.00	1.6	0.40	3.6	0.40	4.0	0.65	4.0	0.60	4.0	0.65	3.6	0.20	3.6	0.80	2.8	0.50	2.8	0.25
5	3.0	0.05	4.5	1.00	2.0	0.30	4.5	0.20	5.0	0.40	5.0	0.60	5.0	0.90	4.5	0.65	4.5	0.50	3.5	0.75	3.5	0.30
6	3.6	0.05	5.4	0.95	2.4	0.25	5.4	0.10	6.0	0.60	6.0	0.50	6.0	0.45	5.4	0.90	5.4	0.35	4.2	0.60	4.2	0.40
7	4.2	0.10	6.3	0.90	2.8	0.15	6.3	0.00	7.0	0.50	7.0	0.65	7.0	0.25	6.3	1.00	6.3	0.20	4.9	0.40	4.9	0.25
8	4.8	0.01	7.2	0.60	3.2	0.10	7.2	0.05	8.0	0.45	8.0	0.45	8.0	0.40	7.2	1.00	7.2	0.25	5.6	0.25	5.6	0.05
9	5.4	0.00	8.1	0.30	3.6	0.05	8.1	0.05	9.0	0.15	9.0	0.05	9.0	0.10	8.1	0.25	8.1	0.10	6.3	0.05	6.3	0.05
Right Bank	6.0	0.00	9.0	0.00	4.0	0.00	9.0	0.00	10.0	0.00	10.0	0.00	10.0	0.00	9.0	0.00	9.0	0.00	7.0	0.00	7.0	0.00
Feature Type (riffle, run, or pool)	riffle		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

(riffle, run, or pool)

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.07.07

WBID # 924
 Site # 8

Field Data Sheets For Recreational Use Stream Surveys

Data Sheet B-Site Characterization

Date & Time: 10.29.07	17:20	Site Location Description (e.g. road crossing):
Personnel: Gilisa Gould and Larissa Brown		CR 1021
Current Weather Conditions: clear		Facility Name: Powell Gardens WWTF
Weather conditions for the past 10 days: 2.17 inches		Permit Number: MO0123501
Drought conditions?: No drought <input checked="" type="checkbox"/> ; Phase I <input type="checkbox"/> ; Phase II <input type="checkbox"/> ; Phase III <input type="checkbox"/> ; Phase IV <input type="checkbox"/> ; Unknown <input type="checkbox"/>		

Site Location:

Location Coordinates (Universal Transverse Mercator Projection, In Meters)					
Site 01	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0418443	4292747		7.6	
Site 11	Easting (UTM X):	Northing (UTM Y):	Horizontal Accuracy:	Meters	
	0418152	4292802		8.2	

Photos:

Photo ID#	Photo Purpose	Photo ID#:	Photo Purpose	Photo ID#:	Photo Purpose
185	downstream, T1	186	upstream, T1	187	canoe on bank
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose
188	downstream, T11	189	upstream, T11		
Photo ID#	Photo Purpose	Photo ID#	Photo Purpose	Photo ID#	Photo Purpose

Uses Observed:

<input type="checkbox"/> Swimming	<input type="checkbox"/> Skin diving	<input type="checkbox"/> SCUBA diving	<input type="checkbox"/> Tubing	<input type="checkbox"/> Water Skiing
<input type="checkbox"/> Wind surfing	<input type="checkbox"/> Kayaking	<input type="checkbox"/> Boating	<input type="checkbox"/> Wading	<input type="checkbox"/> Rafting
<input type="checkbox"/> Hunting	<input type="checkbox"/> Trapping	<input type="checkbox"/> Fishing	<input checked="" type="checkbox"/> None of the above	<input type="checkbox"/> Other:
Describe:				

WBID # 924
 Site # 8

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B- Site Characterization (Continued)

Surrounding Conditions:

<input type="checkbox"/> City/County parks	<input type="checkbox"/> playgrounds	<input type="checkbox"/> MDC conservation lands	<input type="checkbox"/> Urban areas	<input checked="" type="checkbox"/> Rural Residential
<input type="checkbox"/> Campgrounds	<input type="checkbox"/> State parks	<input type="checkbox"/> National Forests	<input type="checkbox"/> Nature trails	<input type="checkbox"/> Stairs/walkways
<input type="checkbox"/> Boating accesses	<input type="checkbox"/> Fence	<input type="checkbox"/> No trespass sign	<input type="checkbox"/> Steep Slopes	<input type="checkbox"/> Other:
Comments: none				

Evidence of Human Use:

<input type="checkbox"/> Roads	<input type="checkbox"/> Foot path/prints	<input type="checkbox"/> Dock/platform	<input type="checkbox"/> Camping Sites	<input type="checkbox"/> Rope swings
<input type="checkbox"/> RV/ATV Tracks	<input type="checkbox"/> Fire pit/ring	<input type="checkbox"/> NPDES Discharge	<input type="checkbox"/> Fishing Tackle	<input type="checkbox"/> Livestock watering
comments/other: canoe on side of bank, near access point				

Substrate:

% Cobble	% Gravel 40	% Sand	% Silt	% Mud/Clay 60	% Bedrock
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Aquatic Vegetation:

none

Water Characteristics:

Odor:	<input type="checkbox"/> Sewage	<input type="checkbox"/> Musky	<input type="checkbox"/> Chemical	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:
Color:	<input type="checkbox"/> Clear	<input type="checkbox"/> Green	<input type="checkbox"/> Gray	<input checked="" type="checkbox"/> Milky	<input checked="" type="checkbox"/> Other:
					brown
Bottom Deposit:	<input type="checkbox"/> Sludge	<input type="checkbox"/> Solids	<input checked="" type="checkbox"/> Fine sediments	<input type="checkbox"/> None	<input type="checkbox"/> Other:
Surface Deposit:	<input type="checkbox"/> Oil	<input type="checkbox"/> Scum	<input type="checkbox"/> Foam	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Other:

WBID # 924
Site # 8

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet B - Site Characterization (continued)

Additional Stream Morphology: (Record isolated pools or other features identified during the survey that may support recreational uses)

Channel Feature	Distance from access location (m)	Width (m)	Length (m)	Median Depth (m)	Max Depth (m)

Comments: (Please record any additional comments here.)

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Please verify that you have completed all sections, checked all applicable boxes, and that the form is complete.

Surveyor's Signature: gilisa gould Date of Survey: 10.29.07

Organization: SES, Inc. Position: field team leader

Field Data Sheets for Recreational Use Stream Surveys

Data Sheet C - Field Survey Results

Waterbody ID: <u>924</u> Site #: <u>8</u> Estimated Channel Incision: <u>5.0</u> (m) (height between low bank width and water) GPS Location - Easting (UTM X), Northing (UTM Y), Horizontal Accuracy Estimate (EPE / PDOP / FOM) 01 UTM X: <u>0418443</u> UTM Y: <u>4292747</u> +/- <u>7.6</u> (meters) 11 UTM X: <u>0418152</u> UTM Y: <u>4292802</u> +/- <u>8.2</u> (meters) Average Stream Width: <u>15</u> (meters) Length of Survey Segment: <u>300</u> (meters) (To determine Length of Reach) (20x average stream width) Field Staff: <u>Gilisa Gould and Larissa Brown</u>	Dissolved Oxygen Date: <u>10.29.07</u> Time: <u>17:20</u> Dissolved Oxygen: <u>12.4</u> (mg/L) Dissolved Oxygen: _____ (% sat) Specific Cond: _____ (µS/cm) Water Temperature: <u>10.9</u> (°C)
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Station	Transect Cross-Section																					
	01		02		03		04		05		06		07		08		09		10		11	
	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)
Left Bank	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	1.5	0.25	1.5	0.05	1.5	0.05	1.3	0.01	1.5	0.05	1.6	0.05	1.6	0.30	1.5	0.10	1.5	0.05	1.5	0.10	1.5	0.20
2	3.0	0.45	3.0	0.30	3.0	0.15	2.6	0.10	3.0	0.20	3.2	0.15	3.2	0.55	3.0	0.15	3.0	0.15	3.0	0.40	3.0	0.40
3	4.5	0.75	4.5	0.50	4.5	0.40	3.9	0.15	4.5	0.70	4.8	0.20	4.8	0.70	4.5	0.20	4.5	0.60	4.5	1.00	4.5	0.40
4	6.0	0.75	6.0	0.55	6.0	1.00	5.2	0.25	6.0	1.00	6.4	0.45	6.4	0.90	6.0	0.50	6.0	0.65	6.0	1.00	6.0	0.25
5	7.5	0.55	7.5	1.00	7.5	1.00	6.5	0.70	7.5	1.00	8.0	0.50	8.0	0.90	7.5	0.55	7.5	0.70	7.5	1.00	7.5	0.15
6	9.0	0.55	9.0	1.00	9.0	1.00	7.8	0.70	9.0	1.00	9.6	0.30	9.6	0.90	9.0	0.60	9.0	1.00	9.0	1.00	9.0	0.20
7	10.5	0.30	10.5	0.65	10.5	1.00	9.1	0.80	10.5	1.00	11.2	0.45	11.2	0.80	10.5	0.80	10.5	1.00	10.5	1.00	10.5	0.25
8	12.0	0.20	12.0	0.35	12.0	0.75	10.4	0.80	12.0	0.95	12.8	0.25	12.8	0.75	12.0	1.00	12.0	1.00	12.0	1.00	12.0	0.15
9	13.5	0.10	13.5	0.20	13.5	0.55	11.7	0.30	13.5	0.45	14.4	0.20	14.4	0.30	13.5	0.60	13.5	0.60	13.5	0.55	13.5	0.05
Right Bank	15.0	0.00	15.0	0.00	15.0	0.00	13.0	0.00	15.0	0.00	16.0	0.00	16.0	0.00	15.0	0.00	15.0	0.00	15.0	0.00	15.0	0.00
Feature Type <small>(rifle, run, or pool)</small>	pool		pool		pool		pool		pool		pool		pool		pool		pool		pool		pool	

(riffle, run, or pool)

Notes: Transects will be measured beginning on left descending bank (0 depth) and finishing on right descending bank (0 depth). This width is the wetted width

GPS locations corresponds to Transect 01 and 11. Transects ordered in upstream to downstream order.

Depth measurements taken at 10 equally spaced locations along transect (determine by dividing wetted width by ten)

Mark dry depth measurements as 0; record actual measurements to 0.01 meter unless depth is too deep to measure (then record as > 1)

All measurements to be taken to the nearest 0.01 meter.

Signed: gilisa gould Date: 11.06.07

WBID# 0924 South Fork Blackwater River



Site#1 Photo ID# 146, Downstream, T1



Site# 1 Photo ID# 147, Upstream, T1



Site# 1 Photo ID# 149, Downstream, T 11



Site# 1 Photo ID# 148, Upstream, T 11

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Site# 2 Photo ID# 151, Downstream, T1



Site# 2 Photo ID# 152, Upstream, T1



Site# 2 Photo ID# 153, Downstream, T 11



Site# 2 Photo ID# 154, Upstream, T 11

WBID# 0924 South Fork Blackwater River



Site# 3 Photo ID# 155, Downstream, T1



Site# 3 Photo ID# 156, Upstream, T1



Site# 3 Photo ID# 157, Downstream, T 11



Site# 3 Photo ID# 158, Upstream, T 11

WBID# 0924 South Fork Blackwater River



Site# 4 Photo ID# 173, Downstream, T1



Site# 4 Photo ID# 174, Upstream, T1



Site# 4 Photo ID# 175, Downstream, T 11



Site# 4 Photo ID# 176, Upstream, T 11

WBID# 0924 South Fork Blackwater River



Site# 5 Photo ID# 177, Downstream, T1



Site# 5 Photo ID# 178, Upstream, T1



Site# 5 Photo ID# 179, Downstream, T 11



Site# 5 Photo ID# 180, Upstream, T 11

WBID# 0924 South Fork Blackwater River



Site# 6 Photo ID# 181, Downstream, T1



Site# 6 Photo ID# 182, Upstream, T1



Site# 6 Photo ID# 183, Downstream, T 11



Site# 6 Photo ID# 184, Upstream, T 11

WBID# 0924 South Fork Blackwater River



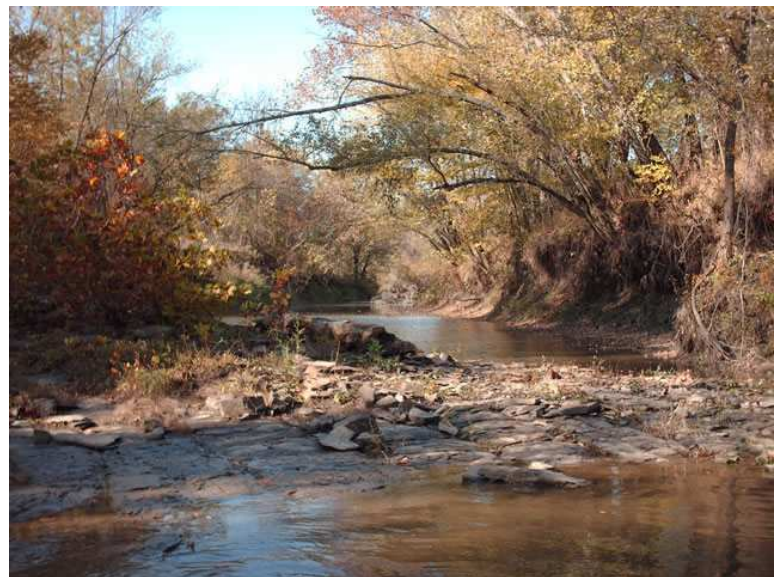
Site# 7 Photo ID# 194, Downstream, T1



Site# 7 Photo ID# 195, Upstream, T1



Site# 7 Photo ID# 196, Downstream, T 11



Site# 7 Photo ID# 197, Upstream, T 11

WBID# 0924 South Fork Blackwater River



Site# 8 Photo ID# 185, Downstream, T1



Site# 8 Photo ID# 186, Upstream, T1



Site# 8 Photo ID# 187, Canoe on bank



Site# 8 Photo ID# 189, Upstream, T 11

WBID# 0924 South Fork Blackwater River



Site# 8 Photo ID# 188, Downstream, T11